

1 **What is Claimed Is:**

2 1. A method for use in a time division multiple access wireless communication
3 system of simulcasting information and transmitting dedicated message information from a
4 plurality of proximately located base stations forming a cellular pattern over the same
5 wireless frequency channel, the method comprising the steps of:

6 constructing frames for transmission by said plurality of base stations
7 comprising control information, simulcast information and dedicated message information
8 within predetermined time slots of said frames; and

9 allocating said simulcast information and said dedicated message information
10 to time slots of the same frame predetermined by said control information of said frame.

1 2. The method as recited in claim 1, wherein said control information fills time
2 slots at the beginning of the frame and said control information is varied between
3 predetermined time slots within said frames such that immediately proximate base stations
4 transmit control information in different predetermined time slots.

1 3. The method as recited in claim 1, wherein said simulcast information
2 represents the same information transmitted by said plurality of base stations and said
3 dedicated message information comprises information representing information intended for
4 a single user.

1 4. The method as recited in claim 1, wherein said allocation of said simulcast
2 information and said dedicated message information to certain time slots varies over time.

1 5. The method as recited in claim 1, wherein said time slots of said frame
2 comprise information time and guard time, said information time and said guard time of each
3 time slot varying in duration over time.

1 6. The method as recited in claim 3, wherein said simulcast information fills
2 time slots having an extended cyclic extension time to mitigate channel dispersion.

1 7. The method as recited in claim 6, wherein said simulcast information time slot
2 extension comprises a guard time approximately twenty-five or higher per cent as long as
3 said simulcast information and said dedicated information comprises a guard time of less
4 than twenty-five per cent of said dedicated information.

1 8. The method as recited in claim 1, further comprising the step of allocating
2 guard time for dedicated information time slots differently from allocating guard time for
3 simulcast information time slots to mitigate simulcast dispersion and to maximize throughput
4 of said dedicated message information.

1 9. The method as recited in claim 1, wherein said wireless communication
2 system utilizes orthogonal frequency division multiplexing modulation.

1 10. The method according to claim 4, wherein said allocation of simulcast and
2 dedicated time slots are interspersed.

1 11. The method according to claim 4, wherein said allocation involves setting
2 boundaries between simulcast and dedicated time slots, said boundaries between simulcast
3 and dedicated time slots being movable in accordance with a volume of simulcast
4 information and dedicated information.

1 12. The method according to claim 11, wherein said boundaries are dynamically
2 movable.

1 13. The method as recited in claim 1, wherein said wireless communication
2 system utilizes a combination of orthogonal frequency division multiplexing modulation and
3 time division multiple access modulation.

1 14. A method for use in a time division multiple access wireless communication
2 system of simulcasting information and transmitting dedicated message information from a
3 plurality of base stations forming a cellular pattern over the same wireless frequency channel,
4 the method comprising the steps of:

5 constructing frames for transmission by said plurality of base stations
6 comprising control information, simulcast information and dedicated message information
7 within predetermined time slots of said frames; and

8 allocating said simulcast information and said dedicated message information
9 to time slots of the same frame predetermined by said control information of said frame.

1 15. The method according to claim 14, wherein said base stations of said cellular
2 pattern are widely separated, resulting in the reuse of said wireless frequency channel and
3 said predetermined time slots.

1 16. A method for use in a combined OFDM and time division multiple access
2 wireless communication system of simulcasting information and transmitting dedicated
3 message information from a plurality of base stations forming a cellular pattern over the
4 same wireless frequency channel, the method comprising the steps of:

5 constructing frames for transmission by said plurality of base stations comprising
6 control information, simulcast information and dedicated message information within
7 predetermined time slots of said frames; and

8 allocating said simulcast information and said dedicated message information to time
9 slots of the same frame predetermined by said control information of said frame.

1 17. An apparatus for use in a combined OFDM and time division multiple access
2 wireless communication system of simulcasting information and transmitting dedicated
3 message information from a plurality of base stations forming a cellular pattern over the
4 same wireless frequency channel, comprising a control processor including:

5 means for constructing frames for transmission by said plurality of base stations
6 comprising control information, simulcast information and dedicated message information
7 within predetermined time slots of said frames; and

8 means for allocating said simulcast information and said dedicated message
9 information to time slots of the same frame predetermined by said control information of said
10 frame.